Mathematics and Statistics

School of Mathematics and Statistics
Faculty of Science

This section presents the requirements for:

- **Mathematics – B.Math. Honours**
    - **Specialization in Applied Analysis**
    - **Specialization in Stochastics**
- **Computer Mathematics – B.Math. Honours**
- **Computer Mathematics Information Technology – B.Math. Honours**
- **Computer Statistics – B.Math. Honours**
- **Statistics – B.Math. Honours**
- **Mathematics – B.Math. General**
    - **Specialization in Applied Analysis**
- **Computer Mathematics – B.Math. General**
- **Statistics – B.Math. General**
- **Computer Science and Mathematics – B.Math. Combined Honours**
- **Mathematics and Physics – B.Sc. Double Honours**
- **Mathematics and Economics – B. Math. Combined Honours**
- **Statistics and Economics – B. Math. Combined Honours**
- **Mathematics – Combined B.Math./M.Sc.**
- **Statistics – Combined B.Math./M.Sc.**
- **Minor in Mathematics**
- **Minor in Statistics**

A Co-operative Education Option is available for Honours programs in the B.Math. degree.

Graduation Requirements

In addition to the program and academic performance evaluation requirements listed below, students must satisfy the University regulations common to all undergraduate students (see the Academic Regulations section of this Calendar).

Students should consult with the School of Mathematics and Statistics when planning their program and selecting courses.

Academic Performance Evaluation for Bachelor of Mathematics

The standard procedures for Academic Performance Evaluation are followed with the following additions.

1. Good Standing at the first Academic Performance Evaluation (0.0 - 5.0 Included Credits) requires that the Major CGPA be at least 5.00 for Honours programs and at least 4.00 for General programs.

2. Good Standing at any Academic Performance Evaluation requires that the CGPA over the courses MATH 1007, MATH 1107, MATH 2007, MATH 2107 be at least 7.00 for Honours programs and at least 5.00 for General programs.

Course Prerequisites

The following courses central to B. Math. programs have grade requirements in their prerequisites:

- MATH 2000 requires C+ in (MATH 1002 or MATH 2007), and C+ in (MATH 1102 or MATH 1107)

- MATH 2100 requires C+ in (MATH 1102 or MATH 2017)

- MATH 2454 requires C+ in (MATH 1002 or MATH 2007), and C+ in (MATH 1102 or MATH 1107)

- STAT 2655 requires C+ in (MATH 1002 or MATH 2007), and C+ in (MATH 1102 or MATH 1107)

- MATH 2007 requires MATH 1004 or C- in (MATH 1007 or MATH 1009)

- MATH 2107 requires MATH 1104 or C- in (MATH 1107 or MATH 1109)

Program Requirements

In B.Math. programs the following selections for first year courses are permitted substitutions:

1. MATH 1002 [1.0] may be replaced with (MATH 1007 and MATH 2007)

2. MATH 1102 [1.0] may be replaced with (MATH 1107 and MATH 2107)

A higher standard must be achieved in the courses MATH 1007, MATH 1107, MATH 2007, MATH 2107 if these are used to fulfil the requirements of the program. See Academic Performance Evaluation Item 2.

Mathematics
B.Math. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.0 credits):

1. 2.0 credits in MATH 1002 [1.0], MATH 1102 [1.0];

2. 3.5 credits in MATH 2000 [1.0], MATH 2100 [1.0], MATH 2454, STAT 2559, STAT 2655;

3. 2.0 credits in MATH 3001, MATH 3057, MATH 3106, MATH 3158;

4. 0.5 credit from: MATH 3002 or MATH 3008;

5. 1.0 credit from the 3000-level Honours Sequence;

6. 1.5 credits in Mathematics (MATH) or Statistics (STAT) at the 4000-level or above;

7. 0.5 credit in MATH 4905;

B. Credits Not Included in the Major CGPA (9.0 credits):

8. 4.0 credits with at least 1.0 credit at the 2000-level or above consisting of:

    a) 1.0 credit in Natural Science Electives;

    b) 2.0 credits in Approved Arts or Social Sciences;

    c) 1.0 credit not in Mathematics, Statistics or Computer Science;

9. 5.0 credits of free electives.

Mathematics
with Specialization in Applied Analysis
B.Math. Honours (20.0 credits)

Items 3, 4, 5 and 6 in the Mathematics program requirements are replaced by:

i) 3.0 credits in MATH 3002, MATH 3057, MATH 3008, MATH 3406, STAT 3506, MATH 4700;

ii) 1.0 credit from MATH 3801, MATH 3804, MATH 3806, the 3000-level Honours Sequence or courses in Mathematics or Statistics at the 4000-level or above;

iii) 0.5 credit from: MATH 4701, MATH 4702;

iv) 0.5 credit in Mathematics or Statistics at the 4000-level or above.

Mathematics
with Specialization in Stochastics
B.Math. Honours (20.0 credits)

Items 3, 4, 5 and 6 in the Mathematics degree requirements are replaced by:

i) 3.0 credits in MATH 3001, MATH 3008, STAT 3506, STAT 3558, STAT 3559, STAT 4501;

ii) 0.5 credit from: STAT 3553 (or STAT 3505), MATH 3801;

iii) 0.5 credit in Statistics (STAT) at the 4000-level;

iv) 1.0 credit in Mathematics or Statistics at the 4000-level or above.

Computer Mathematics
B.Math. Honours (20.0 credits)

A. Credits Included in the Major CGPA (14.0 credits):

1. 7.5 credits in MATH 1002 [1.0], MATH 1102 [1.0], MATH 2000 [1.0], MATH 2100 [1.0], MATH 2454, STAT 2559, STAT 2655, MATH 3001, MATH 3804, MATH 4806, MATH 4905;

2. 1.0 credit in either (MATH 3106 and MATH 3158) or (MATH 3805 and MATH 3801);

3. 1.0 credit from: MATH 3705, MATH 3801, MATH 3802 MATH 3806, MATH 3807, MATH 3809, the 3000-level Honours Sequence, and Mathematics or Statistics at the 4000-level and above;

4. 0.5 credit from: STAT 3506, STAT 3558;

5. 0.5 credit from: MATH 4802, MATH 4803;

6. 0.5 credit from: MATH 4801, MATH 4802, MATH 4803, MATH 4805, MATH 4808;

7. 2.5 credits in COMP 1402, COMP 1405, COMP 1406, COMP 2402, COMP 2404;

8. 0.5 credit in Computer Science at the 2000-level or above;

B. Credits Not Included in the Major CGPA (6.0 credits):

9. 4.0 credits with at least 1.0 credit at the 2000-level or above consisting of:

   a) 1.0 credit in Natural Science Electives;

   b) 2.0 credits in Approved Arts or Social Sciences;

   c) 1.0 credit not in Mathematics, Statistics or Computer Science;

10. 2.0 credits of free electives.

Computer Mathematics Information Technology
B.Math. Honours (20.0 credits)

A. Credits Included in the Major CGPA (13.5 credits):

1. 2.0 credits in MATH 1002 [1.0], and MATH 1102 [1.0];

2. 2.5 credits in COMP 1402, COMP 1405, COMP 1406, COMP 2402, COMP 2404;

3. 3.0 credits in MATH 2008, STAT 2507, STAT 2605, MATH 3804, MATH 3805; MATH 4905;

4. 0.5 credit from: MATH 2108 or MATH 3101;

5. 0.5 credit from: MATH 3801 or MATH 3806;

6. 1.0 credit in Mathematics or Statistics at the 3000-level (excluding STAT 3502);

7. 0.5 credit in Computer Science (COMP) at the 2000-level or above;

8. 0.5 credit in Mathematics, Statistics or Computer Science at the 2000-level or above;

9. 1.0 credit in Mathematics or Statistics at the 3000-level or above;

10. 1.0 credit in Computer Science (COMP) at the 3000-level or above;

11. 1.0 credit in Mathematics or Statistics at the 4000-level or above;

B. Credits Not Included in the Major CGPA (6.5 credits):

12. 4.0 credits with at least 1.0 credit at the 2000-level or above consisting of:

   a) 1.0 credit in Natural Science Electives;

   b) 2.0 credits in Approved Arts or Social Sciences;

   c) 1.0 credit not in Mathematics, Statistics or Computer Science;

13. 2.5 credits in free electives.

Computer Statistics
B.Math. Honours (20.0 credits)

A. Credits Included in the Major CGPA (13.5 credits):

1. 2.0 credits in MATH 1002 [1.0], and MATH 1102 [1.0];

2. 2.5 credits in COMP 1402, COMP 1405, COMP 1406, COMP 2402, COMP 2404;

3. 1.0 credit in Computer Science at the 2000-level or above;

4. 0.5 credit in STAT 2655 or STAT 2605;

5. 4.5 credits in STAT 2559, STAT 3553 (or STAT 3505) STAT 3558, STAT 3559, STAT 3506, MATH 2008, MATH 3804, MATH 3806, MATH 4905;

6. 0.5 credit in MATH 2108 or MATH 3101;

7. 1.5 credits in Statistics (STAT) at the 4000-level;

8. 1.0 credit in Computer Science (COMP) at the 3000-level or above;

B. Credits Not Included in the Major CGPA (6.5 credits):

9. 4.0 credits with at least 1.0 credit at the 2000-level or above consisting of:

   a) 1.0 credit in Natural Science Electives;

   b) 2.0 credits in Approved Arts or Social Sciences;

   c) 1.0 credit not in Mathematics, Statistics or Computer Science;

10. 2.5 credits in free electives.

Notes
1. The course STAT 2559 may be replaced by STAT 2507 and STAT 2509, with a minimum grade of B in each.

2. The courses STAT 3558 and STAT 3559 may be replaced by STAT 3508 and STAT 3509, with a minimum grade of B in each.

Statistics
B.Math. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits):

1. 2.0 credits in MATH 1002 [1.0], MATH 1102 [1.0];

2. 1.0 credit in COMP 1005, COMP 1006;

3. 6.0 credits in MATH 2000 [1.0], MATH 2454, STAT 2559, STAT 2655, STAT 3506, STAT 3553 (or STAT 3505), STAT 3558, STAT 3559, MATH 3806, STAT 4500, MATH 4905;

4. 1.0 credit in either:

   a) MATH 2100 [1.0]

   or

   b) MATH 3107 and 0.5 credit from: 3000-level Honours Sequence, MATH 3705, MATH 3801, MATH 3807, MATH 3809 or Mathematics or Statistics at the 4000-level or above;

5. 0.5 credit from the 3000-level Honours Sequence or Mathematics or Statistics at the 4000-level or above;

6. 1.5 credits in Statistics at the 4000-level;

B. Credits Not Included in the Major CGPA (8.0 credits):

7. 4.0 credits with at least 1.0 credit at the 2000-level or above consisting of:

   a) 1.0 credit in Natural Science Electives;

   b) 2.0 credits in Approved Arts or Social Sciences;

   c) 1.0 credit not in Mathematics, Statistics or Computer Science;

8. 4.0 credits in free electives.

Mathematics
B.Math. General (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits):

1. 2.0 credits in MATH 1002 [1.0], MATH 1102 [1.0];

2. 2.0 credits in MATH 2008, MATH 2108, MATH 2404, STAT 2507;

3. 3.0 credits from: STAT 2509 or Mathematics or Statistics at the 3000-level or above, excluding MATH 3101 and STAT 3502;

B. Credits Not Included in the Major CGPA (8.0 credits):

4. 4.0 credits with at least 1.0 credit at the 2000-level or above consisting of:

   a) 1.0 credit in Natural Science Electives;

   b) 2.0 credits in Approved Arts or Social Sciences;

   c) 1.0 credit not in Mathematics, Statistics or Computer Science;

5. 4.0 credits in free electives.

Mathematics
with Specialization in Applied Analysis
B.Math. General (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits):

1. 2.0 credits in MATH 1002 [1.0], MATH 1102 [1.0];

2. 2.5 credits in MATH 2008, MATH 2404, STAT 2507, MATH 3007, MATH 3705;

3. 0.5 credit from MATH 3404, MATH 3801, MATH 3806 or PHYS 3801;

4. 1.0 credit in MATH or STAT at the 3000-level excluding MATH 3101 and STAT 3502;

5. 1.0 credit at the 2000- or 3000-level in MATH, STAT or COMP;

B. Credits Not Included in the Major CGPA (8.0 credits):

6. 4.0 credits with at least 1.0 credit at the 2000-level or above consisting of:

   a) 1.0 credit in Natural Science Electives;

   b) 2.0 credits in Approved Arts or Social Sciences;

   c) 1.0 credit not in Mathematics, Statistics or Computer Science;

7. 4.0 credits in free electives.

Computer Mathematics
B.Math. General (15.0 credits)

A. Credits Included in the Major CGPA (10.0 credits):

1. 2.0 credits in MATH 1002 [1.0], and MATH 1102 [1.0];

2. 2.5 credits in COMP 1002, COMP 1005, COMP 1006, COMP 2002, COMP 2004;

3. 2.5 credits in MATH 2008, STAT 2507, STAT 2605; MATH 3804, MATH 3805;

4. 0.5 credit from MATH 2108 or MATH 3101;

5. 1.0 credit from: MATH 3801, MATH 3802, MATH 3806, MATH 3807, MATH 3809;

6. 1.0 credit in Mathematics or Statistics at the 3000-level (excluding STAT 3502);

7. 0.5 credit in Computer Science at the 2000-level or above;

B. Credits Not Included in the Major CGPA (5.0 credits):

8. 4.0 credits with at least 1.0 credit at the 2000-level or above consisting of:

   a) 1.0 credit in Natural Science Electives;

   b) 2.0 credits in Approved Arts or Social Sciences;

   c) 1.0 credit not in Mathematics, Statistics or Computer Science;

9. 1.0 credit free elective.

Statistics
B.Math. General (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits):

1. 2.0 credits MATH 1002 [1.0], MATH 1102 [1.0];

2. 4.0 credits MATH 2008, STAT 2507, STAT 2509, STAT 3503, STAT 3504, STAT 3507, STAT 3508, STAT 3509;

3. 1.0 credit at the 2000-level or above;

B. Credits Not Included in the Major CGPA (8.0 credits):

4. 4.0 credits with at least 1.0 credit at the 2000-level or above consisting of:

   a) 1.0 credit in Natural Science Electives;

   b) 2.0 credits in Approved Arts or Social Sciences;

   c) 1.0 credit not in Mathematics, Statistics or Computer Science;

5. 4.0 credits free electives.

Note: students are advised to include at least 1.0 credit in computer science (COMP) in this program.

Computer Science and Mathematics
B.Math. Combined Honours (20.0 credits)

Students must register in one of two concentrations, each of which adds 5.0 credits to the Major CGPA.

A. Credits Included in the Major CGPA (15.0 credits):

1. 4.0 credits in MATH 1002 [1.0], MATH 1107, MATH 2107, MATH 2000 [1.0], MATH 2100 [1.0];

2. 5.5 credits in COMP 1402, COMP 1405, COMP 1406; COMP 2402, COMP 2003, COMP 2404, COMP 3004, COMP 3000, COMP 3005, COMP 3804, COMP 3805;

3. 0.5 credit in MATH 4905 or COMP 4905;

and for the concentration in Computing Theory and Numerical Methods:

4. 2.5 credits in MATH 2454, STAT 2655; MATH 3801, MATH 3806, COMP 4804;

5. 0.5 credit from: MATH 3001, MATH 3002, MATH 3057, MATH 3008;

6. 1.0 credit from MATH 4801, MATH 4802, MATH 4803, MATH 4805, MATH 4806, MATH 4808;

7. 1.0 credit in Computer Science at the 3000-level or above.

and for the concentration in Statistics and Computing:

4. 2.5 credits in MATH 2454, STAT 2559, STAT 2655, STAT 3558, STAT 3559;

5. 0.5 credit from STAT 3506, STAT 3553 (or STAT 3505);

6. 1.0 credit in Statistics at the 4000-level;

7. 1.0 credit in Computer Science at the 4000-level.

B. Credits Not Included in the Major CGPA (5.0 credits):

8. 4.0 credits with at least 1.0 credit at the 2000-level or above consisting of:

   a) 1.0 credit in Natural Science Electives;

   b) 2.0 credits in Approved Arts or Social Sciences;

   c) 1.0 credit not in Mathematics, Statistics or Computer Science;

9. 1.0 credit free elective.

Note:
1. The following courses offered by the School of Business and the Faculty of Engineering are treated as Computer Science courses in this program:

   Business
   BUSI 2400, BUSI 4400, BUSI 4402,
   BUSI 4406, BUSI 4407

   Engineering
   SYSC 3303, SYSC 4005, SYSC 4507

2. Students who wish to keep open the choice of other Honours programs in Mathematics and Statistics are advised to take MATH 1102 [1.0] instead of MATH 1107 and MATH 2107.

Mathematics and Physics
B.Sc. Double Honours (21.5 credits)

Continuation in the program after first year requires an average of at least 9.00 on MATH 1002 and MATH 1102 and at least 9.00 on PHYS 1001 and PHYS 1002 or the equivalent mathematics and physics courses.

A. Credits Included in the Major CGPA (17.0 credits):

1. 7.5 credits in MATH 1002 [1.0], MATH 1102 [1.0], MATH 2000 [1.0], MATH 2100 [1.0], MATH 2454, STAT 2655, MATH 3705, MATH 3001, MATH 3002, MATH 3057, MATH 3106;

2. 1.0 credit in Mathematics (MATH, STAT) at the 4000-level or above;

3. 1.0 credit in either (PHYS 1001 and PHYS 1002) or (PHYS 1003 and PHYS 1004);

4. 4.5 credits in PHYS 2202, PHYS 2604, PHYS 3802, PHYS 3007, PHYS 3606, PHYS 3701, PHYS 4409, PHYS 4707, PHYS 4708;

5. 1.0 credit in Physics at the 4000-level or above;

6. 1.0 credit in ELEC 3105, ELEC 3909;

7. 1.0 credit in either:

   a) MATH 4905 or PHYS 4907 or PHYS 4908, and 0.5 credit free elective;

   or

   b) PHYS 4909 [1.0];

B. Credits Not Included in the Major CGPA (4.5 credits):

8. 1.0 credit from BIOL 1003 and BIOL 1004, or CHEM 1000 [1.0], or GEOL 1005 [1.0], or GEOL 1006 and one of GEOL 1007 or GEOL 1008;

9. 0.5 credit in COMP 1005 or COMP 1007;

10. 0.5 credit in Computer Science;

11. 0.5 credit in NSCI 1000 or Approved Arts or Social Sciences;

12. 1.5 credits in Approved Arts or Social Sciences Electives;

13. 0.5 credit in free elective.

Note: in Requirement 2 above, MATH 4003 is highly recommended.

Mathematics and Economics
B. Math. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (15.0 credits):

1. 7.0 credits in MATH 1002 [1.0], MATH 1102 [1.0], MATH 2000 [1.0], MATH 2100 [1.0], MATH 2454, STAT 2655, STAT 2559, MATH 3001, STAT 3558, STAT 3559;

2. 0.5 credit in MATH 3002 or MATH 3008;

3. 0.5 credit in Mathematics or Statistics at the 3000- or 4000-level;

4. 1.0 credit in Mathematics or Statistics at the 4000-level;

5. 4.0 credits in ECON 1000 [1.0]; ECON 2002, ECON 2003, ECON 2102, ECON 2103, ECON 4200, ECON 4201;

6. 1.0 credit in ECON 4900 [1.0] or ECON 4908 [1.0];

7. 1.0 credit in Economics at the 4000-level;

B. Credits Not Included in the Major CGPA (5.0 credits):

8. 1.0 credit in COMP 1005, COMP 1006;

9. 1.0 credit in Natural Science Electives;

10. 3.0 credits in free electives.

Note: ECON 2400 does not count for credit in this program.

Statistics and Economics
B. Math. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (14.5 credits):

1. 8.0 credits in MATH 1002 [1.0], MATH 1102 [1.0], MATH 2000 [1.0], MATH 2454, STAT 2655, STAT 2559, MATH 3107, STAT 3506, STAT 3553 (or STAT 3505), STAT 3558, STAT 3559; STAT 4502, STAT 4503;

2. 0.5 credit from: MATH 4905 or Statistics at the 4000-level;

3. 4.0 credits in ECON 1000 [1.0], ECON 2002, ECON 2003, ECON 2102, ECON 2103, ECON 4200, ECON 4201;

4. 1.0 credit in ECON 4900 [1.0] or ECON 4908 [1.0];

5. 1.0 credit in Economics at the 4000-level;

B. Credits Not Included in the Major CGPA (5.5 credits):

6. 1.0 credit in COMP 1005, COMP 1006;

7. 1.0 credit in Natural Science Electives;

8. 3.5 credits in free electives.

Note:
1. The course MATH 2100 [1.0] may replace MATH 3107 and 0.5 credit in free electives in this program.

2. ECON 2400 does not count for credit in this program.

Combined B.Math./M.Sc.

This "fast-track" program combines the requirements for Bachelor of Mathematics in Mathematics or Statistics, and Master of Science in Mathematics, into a sequence that will enable exceptional students to complete in four years of study.

Entry to this program directly from an Ontario High School requires both of the following:

i) an average of 90 per cent or better on Grade 12 Mathematics: Advanced Functions and Introductory Calculus (or an OAC in Calculus) and Grade 12 Mathematics: Geometry and Discrete Mathematics (or an OAC in Algebra and Geometry);

ii) an average of 85 per cent or better over six credits in Grade 12 courses of University or University/College type (or over six OACs).

Admission, continuation and graduation from the undergraduate portion of the program requires a Major CGPA of 11.0 or better and Overall CGPA of 10.00 or better.

Before entry into the fourth year of this program, students must: obtain a recommendation from the School of Mathematics and Statistics to continue, apply to graduate with a B.Math. General degree, by the end of January of their third year, and submit an application for graduate studies to the School by mid-February.

Undergraduate Portion

Students may apply for admission to either the Mathematics or the Statistics versions of the program.

Mathematics
B.Math. (15.0 credits)

A. Credits Included in the Major CGPA (9.5 credits):

1. 7.0 credits in MATH 1002 [1.0], MATH 1102 [1.0], MATH 2000 [1.0], MATH 2100 [1.0], MATH 2454, STAT 2655, MATH 3001, MATH 3057, MATH 3106, MATH 3158;

2. 0.5 credit in MATH 3002 or MATH 3008;

3. 0.5 credit from the 3000-level Honours Sequence or Mathematics or Statistics at the 4000-level or above;

4. 1.5 credits at the 4000-level or above in Mathematics or Statistics;

B. Credits Not Included in the Major CGPA (5.5 credits):

5. 4.0 credits with at least 1.0 credit at the 2000-level or above consisting of:

   a) 1.0 credit in Natural Science Electives;

   b) 2.0 credits in Approved Arts or Social Sciences;

   c) 1.0 credit not in Mathematics, Statistics or Computer Science;

6. 1.5 credits in free electives.

Students wishing to specialize in Stochastics may, with the permission of the School, replace Items 1 - 4 of the Mathematics version by:

1. 5.5 credits in MATH 1002 [1.0], MATH 1102 [1.0], MATH 2000 [1.0], MATH 2100 [1.0], MATH 2454, STAT 2559, STAT 2655;

2. 2.0 credits in MATH 3001, STAT 3506, STAT 3558, STAT 3559;

3. 0.5 credit from MATH 3002, MATH 3057, MATH 3008;

4. 1.5 credits at the 4000-level or above in Mathematics or Statistics.

Statistics
B.Math. (15.0 credits)

A. Credits Included in the Major CGPA (9.5 credits):

1. 8.0 credits in MATH 1002 [1.0], MATH 1102 [1.0], MATH 2000 [1.0], MATH 2100 [1.0], MATH 2454, STAT 2559, STAT 2655, MATH 3001, STAT 3506, STAT 3553 (or STAT 3505), STAT 3558, STAT 3559;

2. 1.5 credits at the 4000-level or above in Mathematics or Statistics;

B. Credits Not Included in the Major CGPA (5.5 credits):

3. 4.0 credits with at least 1.0 credit at the 2000-level or above consisting of:

   a) 1.0 credit in Natural Science Electives;

   b) 2.0 credits in Approved Arts or Social Sciences;

   c) 1.0 credit not in Mathematics, Statistics or Computer Science;

4. 1.5 credits in free electives.

Graduate Portion – M.Sc.

During the graduate portion of the "fast-track" program, the student is registered as a graduate student and is covered by the regulations of the Faculty of Graduate Studies.

5. 1.5 credits at the 5000-level or above in Mathematics or Statistics;

6. 1.0 credit at the 5000-level or above in Mathematics or Statistics or from another department or school;

7. Either

   a) MATH 4905 and 1.5 credits in Mathematics or Statistics at the 5000-level or above

   or

   b) an M.Sc. thesis in Mathematics.

Minors

Minor in Mathematics

This minor is open to students in all undergraduate programs except programs of the School of Mathematics and Statistics.

Requirements (4.0 credits):

1. 1.0 credit in either:

   a) MATH 2007 or MATH 1005, and 0.5 credit from MATH 1004, MATH 1007, or MATH 1009;

or

b) MATH 1002 [1.0];

2. 1.0 credit in either:

a) MATH 2107 and 0.5 credit from MATH 1104, MATH 1107, or MATH 1109;

or

b) MATH 1102 [1.0]

3. 1.0 credit in Mathematics or Statistics at the 2000-level or above;

4. 1.0 credit in Mathematics or Statistics at the 3000-level or above;

5. The remaining requirements of the major discipline(s) and degree must be satisfied.

Minor in Statistics

This minor is open to students in all undergraduate programs except programs of the School of Mathematics and Statistics.

Requirements (4.0 credits):

1. 0.5 credit from: MATH 1004, MATH 1007, MATH 1009;

2. 0.5 credit from: MATH 1104, MATH 1107, MATH 1109;

3. 1.0 credit in either:

a) 0.5 credit from: STAT 2507, STAT 2606, STAT 3502; and 0.5 credit from: STAT 2509, STAT 2607

or

b) ECON 2201 and ECON 2202;

4. 1.5 credits in STAT 3503, STAT 3504, STAT 3507;

5. 0.5 credit from COMP 1005, COMP 1007, BUSI 1402, ECOR 1606;

6. The remaining requirements of the major discipline(s) and degree must be satisfied.

Note:

1. Item 1 above may be satisfied by credit in MATH 1002 [1.0]. Item 2 may be satisfied by credit in MATH 1102 [1.0].

2. With approval an alternate introductory statistics course may be used to satisfy Item 3 above.

Course Categories for B. Math. Programs

The following categories of courses are used in the specification of the programs.

• 2000-level Honours Sequence

The following courses constitute the 2000-level Honours Sequence:

MATH 2000 [1.0], MATH 2100 [1.0], MATH 2454, STAT 2559, STAT 2655, MATH 2907

• 3000-level Honours Sequence

The following courses constitute the 3000-level Honours Sequence:

MATH 3001, MATH 3002, MATH 3057, MATH 3008, MATH 3106, MATH 3158, MATH 3256, MATH 3306, MATH 3406, MATH 3805, STAT 3505, STAT 3506, STAT 3553, STAT 3558, STAT 3559

• Natural Science Electives

All courses with subject codes:

BIOC, BIOL, BIOT, CHEM, ENSC, GEOL, ISCI, NSCI, PHYS

• Approved Arts or Social Sciences Electives

All courses offered by the Faculty of Arts and Social Sciences and the Faculty of Public Affairs and Management are acceptable as Arts or Social Sciences Electives except for the following courses, which are only accepted for credit as free electives in any program of the School. See Item (iii) under Prohibited and Restricted Courses below concerning Computer Mathematics programs.

Business
BUSI 1001, BUSI 1002, BUSI 1004, BUSI 1005, BUSI 1402, BUSI 2001, BUSI 2002, BUSI 2402, BUSI 2700, BUSI 3001, BUSI 3008, BUSI 4000, BUSI 4001, BUSI 4002

Economics
ECON 4005, ECON 4706, ECON 4707

Geography
GEOG 2007, GEOG 2100, GEOG 3002, GEOG 3005, GEOG 3006, GEOG 3007, GEOG 3101, GEOG 3102, GEOG 3103, GEOG 3105, GEOG 3108, GEOG 3109, GEOG 4000, GEOG 4002, GEOG 4003, GEOG 4005, GEOG 4006, GEOG 4008, GEOG 4101 (GEOL 4105), GEOG 4103 (ENVE 3003, GEOL 4109), GEOG 4104, GEOG 4107 (CIVE 4204, GEOL 4204), GEOG 4108

Interdisciplinary Social Sciences
ISSC 3000

Psychology
PSYC 2200, PSYC 2700, PSYC 3200 [1.0], PSYC 3201, PSYC 3202, PSYC 3203, PSYC 3204, PSYC 3205, PSYC 3206, PSYC 3207, PSYC 3506, PSYC 3700 [1.0], PSYC 3702, PSYC 3800 [1.0], PSYC 4001

• Prohibited and Restricted Courses

1. The course MATH 1805/COMP 1805 can be counted only as a half-credit "free elective" in Mathematics and Statistics programs.

2. The following courses may not be counted for academic credit (even as free electives) in any program offered by the School of Mathematics and Statistics:

ECON 2200 [1.0], ECON 2201, ECON 2202, ECON 2400, ECON 4004;BUSI 2300; GEOG 2006, GEOG 3003; PSCI 2700 [1.0];PSYC 2000 [1.0], PSYC 2001, PSYC 2002, PSYC 3000 [1.0];ISSC 4001, ISSC 4002; SOWK 2500 [1.0], SOWK 3501, SOWK 3502; SOCI 2003 [1.0], ANTH 2003 [1.0], SOCI 3700 [1.0], SOCI 4003, SOCI 4004, SOAN 4500

A student who has successfully completed one or more of these courses prior to September 1, 1996 will retain credit for these courses.

Students who have completed ECON 2201 and 2202, (or ECON 2200 [1.0]) and wish to enter a B.Math. General program may be exempted from taking STAT 2507 and STAT 2509 only with permission of the School of Mathematics and Statistics, and provided the grade in ECON 2201 and ECON 2202 is B- or better in each.

3. The courses BUSI 1402, BUSI 2402 and COMP 1001 may not count for credit in the Computer Mathematics Honours or General program, even as free electives.

4. Only one of MATH 3806, COMP 3806, CMPS 3800 or MATH 3800 may count for credit in a B.Math. program.